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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,437	12/17/2001	Stephen A. Johnston	5171-00041	2358

7590 09/19/2007

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EXAMINER	
FORD, VANESSA L	
ART UNIT	PAPER NUMBER
1645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/023,437	**Applicant(s)** JOHNSTON ET AL.	
	Examiner Vanessa L. Ford	**Art Unit** 1645	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 08 August 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: *NONE*.
   Claim(s) objected to: *NONE*.
   Claim(s) rejected: *92-95 and 104-121*.
   Claim(s) withdrawn from consideration: *NONE*.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☒ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see Advisory attachment.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☒ Other: Advisory Attachment.

Advisory Attachment

1. This Office Action is responsive to Applicant's response filed August 14, 2007. The declaration submitted by Dr. Bernhard Kaltenboeck under 37 CFR 1.132 filed August 14, 2007 is acknowledged.

Rejection Maintained

The rejection is reiterated below:

2. The rejection under 35 U.S.C. 112, first paragraph (enablement) is maintained for claims for the reasons set forth on pages 2-8, paragraph 3 of the Final Office Action.

The rejection is reiterated below:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 92-95 and 104-121 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims are direct to a method of immunizing an animal comprising the steps administering a *Chlamydia psittaci* antigen to an animal in an amount effective to induce an immune response against *Chlamydia psittaci* wherein the *Chlamydia psittaci* antigen comprise the amino acid sequence as set forth as SEQ ID NO:7, SEQ ID NO:9 SEQ ID NO:11 and SEQ ID NO:13 (sequences examined with regard to the claimed invention).

The instant specification teaches that SEQ ID NO: 7 (CP4#1) is a polypeptide translation corresponding to SEQ ID NO:6 homolog to *Chlamydia pneumoniae* DNA POL III Gamma and TAU subunits. The specification teaches that SEQ ID NO: 9 (CP4#1) is a polypeptide translation corresponding to SEQ ID NO:8 homolog to *Chlamydia pneumoniae* DNA POL III Gamma and TAU subunits. SEQ ID NO: 11 (CP4#2) is a polypeptide translation corresponding to SEQ ID NO:10 homolog to *Chlamydia pneumoniae* Glu-tRNA Gln Anido-transferase (C subunit) (gatC gene) and SEQ ID NO:13 is (CP4#2) is a polypeptide translation corresponding to SEQ ID NO:12

homolog to *Chlamydia pneumoniae* Glu-tRNA Gln Anido-transferase (C subunit) (gatC gene).

The instant specification discloses in Examples 5-12 experimental examples using *Chlamydia* nucleic acid molecules and polypeptides used to immunize animals. The specification refers Figures 4- 8 which disclose the data from the various experimental examples. Regarding figure 5, which are the results of protection assays of testing individual gene fragments in found 4 (page 15). The specification teaches that protection was scored as lung weight relative to the average of the vaccinate, maximum protection, positive control (vaccinated =1) and the non-vaccinated, challenged, maximum disease, negative control (challenged=0). It is unclear as to what Applicant intends by the data presented in Figure 5. The instant specification presents data in terms of maximum protection. Applicant does not present an unvaccinated control. Thus, one of skill in the art cannot interpret Applicant's data as set forth regarding protection assays with data from an unvaccinated control. It is unclear as to what the data present in figure 5 actually discloses. The skilled artisan cannot drawn in conclusive evidence from the data presented in the instant specification.

The structure of the elected sequences (SEQ ID Nos 7 and 9) have 48.4% and 64.4% sequence identity, respectively with the DNA polymerase III gamma and tau family of polypeptides from *Chlamydia pneumoniae*. See the sequence alignments below:

SEQ ID : 7, DNA polymerase III gamma and tau [imported] – Chlamydia pneumoniae (strain J138)
Query Match 48.4%; Score 369.5; DB 2; Length 442;
Best Local Similarity 56.2%; Pred. No. 2.6e-28;
Matches 81; Conservative 21; Mismatches 33; Indels 9; Gaps 3;

```
Qy      3 IRTQKYAEALLPVTTAINSGVAPITFLHDLTVFYRDVLLNKDQGNSPLSAIAMHYSSECL 62
          |  : || ||  ||  :||||||:|||||||:|||::||    || |  :  | :| |
Db    260 ILQRDYATALGIVTDFLNSGVAPVTFLHDLTLFYRNLLLT----NSTTSKFSSQYKTEQL 315

Qy     63 LEIIDFLGEAAKHLQQTIFEKTFLETVIIHLIRICQRPSLETLFSQLKTSTFDTVRNVPQ 122
          |||||||||:||||| ||||:||||||||:||| ||| |  | | :|:  |: :||: :
Db    316 LEIIDFLGESAKHLQNTIFEQTFLETVIIHIIRIYQRPVLSELISSIKSRQFEGLRNIKE 375

Qy    123 ---QQEPSKPSIQPEKHYQDQSFL 143
             |: | |  ||:  |::||||
Db    376 PTLTQQVSAP--QPQPTYKEQSFL 397
```

SEQ ID NO:9: DNA polymerase III gamma and tau - Chlamydia pneumoniae (strains CWL029 and AR39)

Query Match 64.4%; Score 1443; DB 2; Length 442;
Best Local Similarity 66.8%; Pred. No. 1.9e-93;
Matches 298; Conservative 48; Mismatches 88; Indels 12; Gaps 4;

```
Qy      1 MTSATYQVSSRKYRPQTFAEMLGQDAVVTVLKNALQFQRVAHAYLFSGIRGTGKTTLARI 60
          ||  || |||||||| | |:||| :|| |||||| | | ||||||||||||||||||||
Db      1 MTLQPYQASSRKYRPQIFREILGQSSVVAVLKNALVFNRAAHAYLFSGIRGTGKTTLARI 60

Qy     61 FAKALNCKELTPEHEPCNQCCVCKEISSGTSLDVIEIDGASHRGIEDIRQINETVLFTPA 120
          ||||||  |: : ||||||  ||||:||:||||:||||||||||||||||||||||||||
Db     61 LAKALNCVHLSEDGEPCNQCFSCKEIASGSSLDVLEIDGASHRGIEDIRQINETVLFTPV 120

Qy    121 KSQYKIYIIDEVHMLTKEAFNSLLKTLEEPPSHVKFFLATTENYKIPSTILSRCQKMHLK 180
          |:::|||||||||||||||:|||||||||  |||||  ||||  :||| ||||||||||:
Db    121 KAKFKIYIIDEVHMLTKEAFNALLKTLEEPPQHVKFFFATTEIHKIPGTILSRCQKMHLQ 180

Qy    181 RIPETMIVDKLASISQAGGIETSREALLPIARAAQGSLRDAESLYDYVIGLFPTSLSPEL 240
          ||||  |::||: ::|   || |:||| ||||||||||||||||||| ||| ||||:
Db    181 RIPEKTILEKLSLMAQDDHIEASQEALAPIARAAQGSLRDAESLYDYVISLFPKSLSPDT 240

Qy    241 VADALGLLSQDTLATLSECIRTQKYAEALLPVTTAINSGVAPITFLHDLTVFYRDVLLNK 300
          || |||  |||:| ||   | : || ||  ||  :||||||:|||||||:|||::||
Db    241 VAQALGFASQDSLRTLDNAILQRDYATALGIVTDFLNSGVAPVTFLHDLTLFYRNLLLT- 299

Qy    301 DQGNSPLSAIAMHYSSECLLEIIDFLGEAAKHLQQTIFEKTFLETVIIHLIRICQRPSLE 360
            ||  |  :  | :| ||||||||||:|||||  ||||:|||||||||:||| ||| |
Db    300 ---NSTTSKFSSQYKTEQLLEIIDFLGESAKHLQNTIFEQTFLETVIIHIIRIYQRPVLS 356

Qy    361 TLFSQLKTSTFDTVRNVPQ---QQEPSKPSIQPEKHYQDQSFL---TSPSPTPKVQHQKE 414
          | | :|:  |: :||: :   |: | |  ||:  |::||||    |:  |:  :
Db    357 ELISSIKSRQFEGLRNIKEPTLTQQVSAP--QPQPTYKEQSFLEKKNQPAAEGKIISVEV 414

Qy    415 ASPSLVGSATIDTLLQFAVVEFSGIL 440
          | : : || :||||||||||||||||
Db    415 KSSASIKSAAVDTLLQFAVVEFSGIL 440
```

The structure of the elected sequences (SEQ ID Nos 11 and 13) have 46.4% and 62.8% sequence identity, respectively with the family glu-tRNA amidotransferase C chain of polypeptides from *Chlamydia pneumoniae*. See the sequence alignments below:

SEQ ID NO: 11, C;Superfamily: probable glu-tRNA amidotransferase C chain

Query Match 46.4%; Score 91; DB 2; Length 100;
Best Local Similarity 35.9%; Pred. No. 0.00018;
Matches 14; Conservative 14; Mismatches 11; Indels 0; Gaps 0;

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Qy      3 IQEYESSLNEVIKTMAASIAMDVTDVVIEVGLSHVISPE 41
```

::|: :|:|:|| | ||:|::|:::| : | : ||
Db 27 VEEFVTSMNDVIALMQEVIAIDISDIILEATVHHFVGPE 65

C;Superfamily: probable glu-tRNA amidotransferase C chain

SEQ ID NO: 13, Query Match 62.8%; Score 301; DB 2; Length 100;
Best Local Similarity 56.0%; Pred. No. 5.8e-21;
Matches 56; Conservative 24; Mismatches 20; Indels 0; Gaps 0;

Qy 1 MTQPYVTREDIILLAKSSALELSEEFIQEYESSLNEVIKTMAASIAMDVTDVVIEVGLSH 60
||: || :|:|| |||::|||| : ::|: :|:|:|| | ||:|::|:::| : |
Db 1 MTESYVNKEEIISLAKNAALELEDAHVEEFVTSMNDVIALMQEVIAIDISDIILEATVHH 60

Qy 61 VISPEDLREDIVASSFSREEFLTNVPESLGGLVKVPTVIK 100
: |||||||:| | |::||||:||| ||||||||||||
Db 61 FVGPEDLREDMVTSDFTQEEFLSNVPVSLGGLVKVPTVIK 100

The state of the art regarding DNA Pol III gamma and Tau subunits and amind-transferase (C subunit) (gene C gene) are described below:

McHenry *(Molecular Microbiology 2003, 49(5), 1157-1165)* teach that genome sequencing studies have revealed that low GC content gram-positive bacteria have two polymerases. McHenry teaches that one type is prototypical gram-positive bacterial PolC which is characterized by a catalytic subunit with proofreading exonnuclease activity and the second is polymerase is homologous to the α subunit of *E. coli* Pol III (DnaE). Genetic analysis indicate that both polymerases are essential for viability (pages 1162-1163). Therefore, the skilled artisan would conclude from the review of the cited art that this polypeptide is not an outer-membrane protein and internal to *Chlamydia psittaci* and is involved in transcription.

Curnow et al (*Proc. Natl. Acad. Sci., Vol. 94, October 1997, p. 11819-11826)* teach that three genes gatC, gat A and gatB constitute the transcriptional unit of gram-positive bacteria (see the Abstract). Raczniak et al *(The Journal of Biological Chemistry)* teach that GatC if the most divergent subunit for which no function can be suggested by homology searches (page 45867). Raczniak et al teach that it was proposed that GatC is required for proper expression or folding of the GatA subunit (page 45867). Therefore, the skilled artisan would conclude from the review of the cited art that this polypeptide is not an outer-membrane protein and internal to *Chlamydia psittaci* and is involved in transcription.

The specification has failed to teach or disclose how the data in figure 5 correlates to protection assays. Thus, one skilled in the art cannot conclude that there is a correlation between protective immunity and the claimed method of immunizing animals using the claimed polypeptides as set forth in SEQ ID Nos: 7, 9, 11 and 13 since there is no unvaccinated control data presented and the skilled artisan cannot drawn in conclusive evidence from the data presented in the instant specification.

The prior art as cited above has taught that DNA pol III gamma and tau as well as gatC are enzymes which are involved in transcription. These proteins are not known in the art as being potential antigens to protect against *Chlamydia* or any other bacterial infections. In fact, the art teaches that the function of GatC is unknown.

Based on the instant specification the skilled artisan would not reasonably conclude that the claimed method is enabled. As, state above, it is unclear how Applicant interprets the data present in for example, Figure 5, since no unvaccinated control is present and the data is disclosed in the terms of maximum protection.

Factors to be considered in determining whether undue experimentation is required, are set forth in In re Wands 8 USPQ2d 1400. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art and (8) the breadth of the claims.

Applying the above test to the facts of record, it is determined that 1) no declaration under 37 C.F.R. 1.132 or other relevant evidence has been made of record establishing the amount of experimentation necessary, 2) insufficient direction or guidance is presented in the specification with regard to data present which correlates to protection assays in which the claimed method has been practiced, 3) there are no working examples are not specific to particular antigen used in the claimed method of immunizing an animal, 4) the relative skill of those in the art is commonly recognized as quite high (post - doctoral level), and 5) the state of the art in the field to which the invention pertains is recognized in the art as evidenced by the cited prior art.

In view of all of the above, in view of the lack of guidance provided in the specification, it is determined that it would require undue experimentation to make and use the claimed invention. Applicant is asked to place on the record, what they intend by the data present in figure 5.

Applicant's Arguments

Applicant urges that a second Declaration submitted by Dr. Bernhard Kaltenboeck filed August 8, 2007 clarifies the data present in the specification and Figure 5.

Examiner's Response to Applicant's Arguments

On the outset, it appears that Applicant is enabled for some embodiment of the claimed method of immunizing an animal comprising administering a *Chlamydia* antigen. Unfortunately, the second Declaration submitted by Dr. Bernhard Kaltenboeck filed August 8, 2007 is insufficient to overcome the rejection. This declaration does not

clarify or correlate the data in Figure 5 with the specification in manner that the Office can appreciate the correlation. For example, page 2, paragraph 6 of the declaration states that "CP#1 correlates to claimed SEQ ID Nos. 7 and 9 while CP4#2 correlates to SEQ ID Nos. 11 and 13. It is unclear as to how one CP4 number can correlate to 2 independent and distinct SEQ ID Nos. Additionally, it is unclear as if the antigens used in the experimental examples actually correlate to the data presented in Figure 5 or more importantly it is unclear as to whether the antigens recited in the claimed method were used in the experimental examples. It cannot be ascertained from what is presented in the instant specification and the two declarations submitted by Dr. Bernhard Kaltenboeck as to what antigens were administered to the animals and protection was provided.

In view of all of the above, the enablement rejection under 35 U.S.C. 112, first paragraph is maintained.

In an effort to expedite prosecution in this application, the Office requests that Applicant contact the Examiner to schedule an in-person or telephonic interview to explain the essence of the invention, explain the experimental data presented in the instant specification when the invention was applied and answer any other questions related to the claimed invention. See the paragraph below for the Examiner's contact information.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa L. Ford whose telephone number is (571) 272-0857. The examiner can normally be reached on 9 am- 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on (571) 272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vanessa L. Ford
Biotechnology Patent Examiner
September 14, 2007

NITA MINNIFIELD
PRIMARY EXAMINER
9/16/07